CHAPTER 3

SERVICE RIFLE AND PISTOL AND MARKSMANSHIP

As a Seabee, you make important contributions to the Naval Construction Force (NCF) activities. You are important as an individual as well as a Seabee. The NCF is made up of individuals like you, working together as a team. The ultimate goal of the NCF is success in its construction projects as well as the defense of these projects when needed. Your job is to help achieve that success and to help provide that defense. You may have to fight alone; but most of the time, you will work and help defend a site with other Seabees under a unit or team leader. You can prepare yourself for defense by acquiring the knowledge and skills needed for using both individual and crew-served weapons. You, as a Seabee, are likely to be required to use them; therefore, they are discussed in the next two chapters.

Basic and introductory information about Seabee weapons is given so you can load, fire, field strip, and clean the service rifle, service pistol, light machine gun, light antitank weapon, grenade launcher, and mortar.

This chapter covers functioning, mechanical training, assembly and disassembly, loading and firing, ammunition, safety precautions, and marksmanship techniques for both the M16A1 and M16A2 service rifles and the .45 caliber pistol.

THE M16A1 AND M16A2 RIFLES

The M16A1 and the M16A2 service rifles (figs. 3-1 and 3-2) are 5.56-mm, magazine-fed, gas-operated shoulder weapons. Their design provides for either semiautomatic or automatic fire by means of a selector lever.

The M16A1 is equipped with a flash suppressor, but the M16A2 has a flash compensator to hold the muzzle down during rapid and automatic firing.

The barrel of the M16A1 is covered by two aluminum-lined fiber glass handguards (fig. 3-3). These handguards have notches to permit air to circulate around the barrel and to serve further as protection for the gas tube. On the Ml6A2, the handguards are round and ridged (fig. 3-2), making them stronger and easier to grip. The handguards are interchangeable; the handguard retaining ring is also specially contoured and easier to grip.

A "clothespin" biped is issued to, and used by, the automatic rifleman. The biped attaches to the barrel directly beneath the front sling swivel (fig. 3-4).

A forward assist assembly (fig. 3-1), located on the right rear of the upper receiver, permits closing of the bolt when the force of the action spring does not.

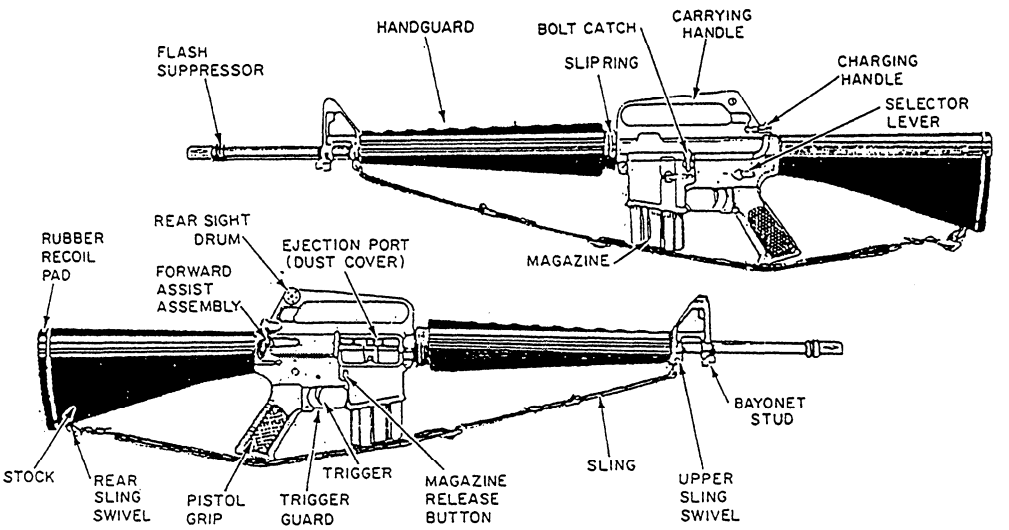


Figure 3-1.—M16A1 service rifle, 5.56 mm, left and right side views.

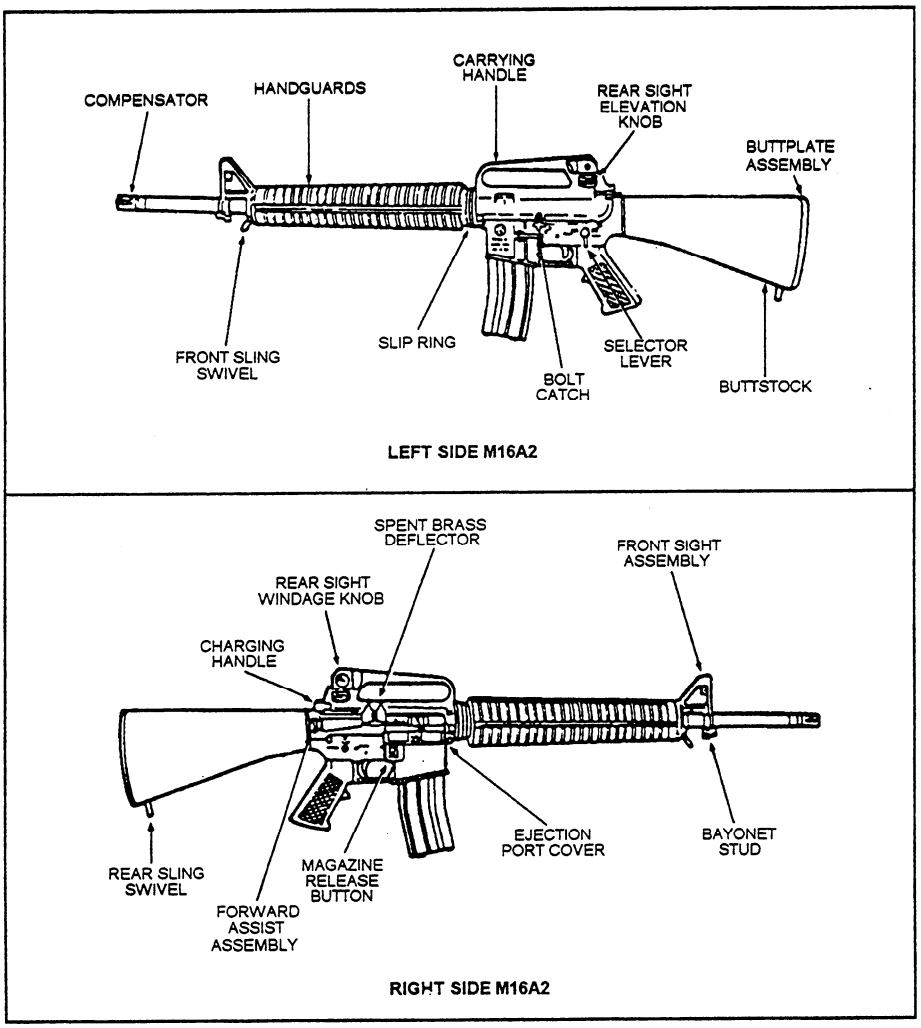


Figure 3-2.—M16A2 service rifle, 5.56 mm.

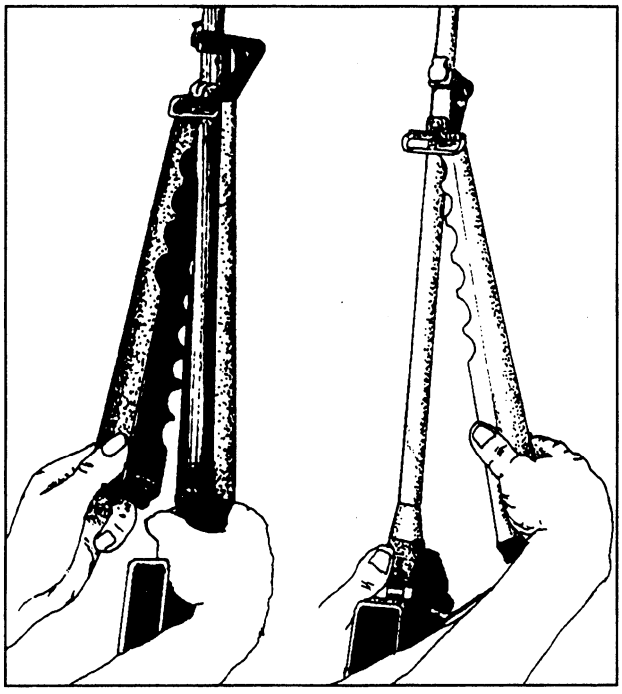


Figure 3-3.—Fiber glass handguard.

The trigger guard adapts easily for use in winter operations. A spring-loaded retaining pin is depressed so the trigger guard swings down along the pistol grip, allowing ready access to the trigger when cold weather mittens are being worn.

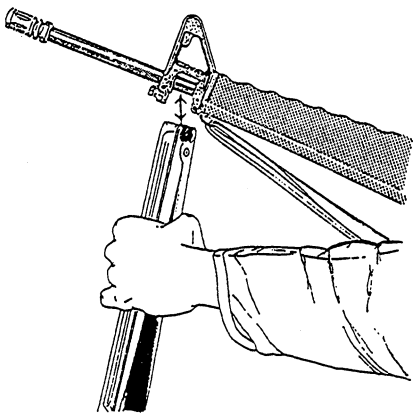


Figure 3-4.—Attaching "clothespin" bipod to M16 rifle.

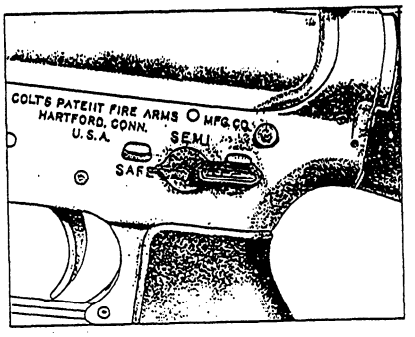


Figure 3-5.—Selector lever pointing to SAFE.

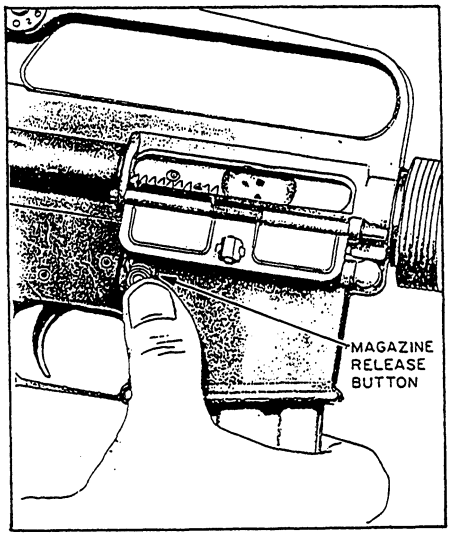


Figure 3-6.—Removing the magazine.

An ejection port cover prevents sand and dirt from getting into the ejection port. It should be closed during periods when firing is NOT anticipated and will open by either forward or rearward movement of the bolt carrier.

The M16A2 is an improvement over the M16A1 in the following ways:

- The barrel is 3 to 4 ounces heavier. The new barrel spins the bullet one turn in 7 inches, compared to one turn in 12 inches by the M16A1.
- The Ml6A2 has a maximum effective range of 800 meters, compared to 500 meters for the M16A1.
- The front sight post is now square instead of round, making it easier to see.
- The new model no longer fires full y automatic; it fires three rounds only per burst in the automatic setting.
- Left-handed shooters have some protection from injury with a built-in brass deflector located at the rear

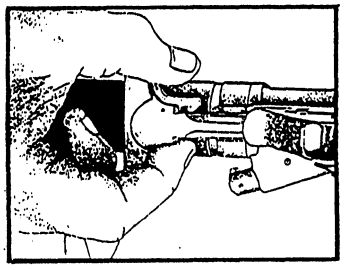


Figure 3-7.—Pulling the charging handle rearward.

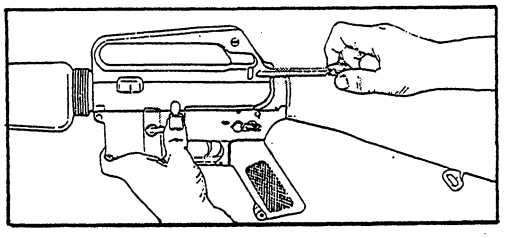


Figure 3-8.—Locking the bolt open.

of the ejection port. The stock of the rifle is 5/8 inch longer, making it more comfortable and easier to handle.

Unless specifically stated otherwise, the following discussion of the M16 rifle applies equally to both the M16A1 and M16A2.

For economy in communication, the following maintenance procedures (clearing, field-stripping, assembling, etc.) for the M16 service rifles are written for the right-handed Seabee. The left-handed Seabee can reverse hand directions for these procedures if it improves their efficiency.

CLEARING THE RIFLE

The first precaution to take in handling any weapon is to make it safe by clearing it. To clear the Ml 6 rifle, place the butt against the right thigh and proceed as follows:

1. Attempt to point the selector lever toward SAFE, the position shown in figure 3-5. If the weapon is not cocked, the selector lever cannot be pointed toward SAFE. If that is the case, do not cock the weapon at this time; instead, go on to the next step in clearing.

2. Remove the magazine, as shown in figure 3-6. Grasp it with the right hand (fingers curled around the front of the magazine, thumb placed on the magazine catch button). Apply pressure on the magazine catch button with the thumb, and pull the magazine straight out of the weapon.

3. Lock the bolt open, as shown in figures 3-7 and 3-8. Grasp the charging handle with the thumb and

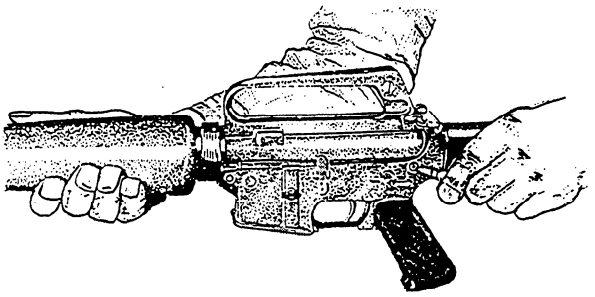


Figure 3-9.—Pressing takedown pin to the right.

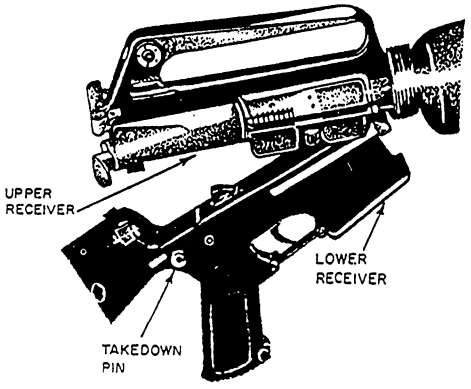


Figure 3-10.—Breaking upper receiver away from lower receiver.

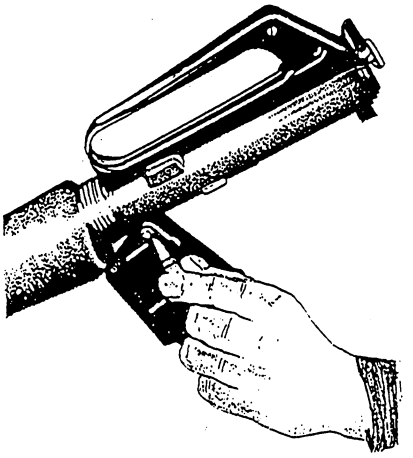


Figure 3-11.—Pressing out receiver pivot pin.

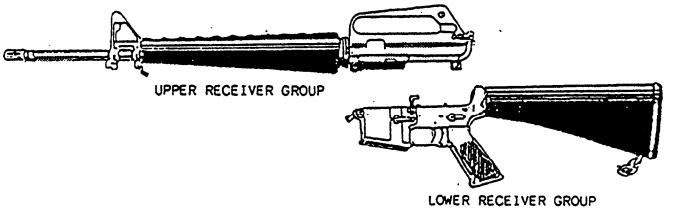


Figure 3-12.—Upper and lower receiver groups.

forefinger of the right hand, depress the charging handle, latch it with the right thumb, and pull to the rear (fig. 3-7). When the bolt is fully rearward, press the bottom of the bolt catch with the thumb or forefinger of the left hand (fig. 3-8). Allow the bolt to move slowly forward until it engages the bolt catch, and return the charging handle to its forward position.

4. Inspect the receiver and chamber of the weapon, by looking through the ejection port, to ensure these spaces contain no ammunition.

5. Check the selector lever to ensure it points toward SAFE; then allow the bolt to go forward by depressing the upper portion of the bolt catch.

CAUTION

The selector must be on SAFE to prevent damage to the automatic sear during assembly and disassembly.

FIELD-STRIPPING THE RIFLE

The individual Seabee is authorized to disassemble the M16 to the extent termed *field-stripping*. Field-stripping is done without supervision and is adequate for normal maintenance. As the weapon is disassembled, lay out the parts on a table or other clean surface in the order of removal from left to right. This makes reassembly easier because you can assemble the parts in the reverse order of disassembly.

The steps infield-stripping are as follows:

1. Remove the sling, and place the rifle on a table or flat surface, muzzle to the left.

2. Turn the weapon on its right side, keeping the muzzle to the left. Press the takedown pinto the right (fig. 3-9) until the upper receiver swings free of the lower receiver (fig. 3-10).

CAUTION

The takedown pin does not come out of the receiver.

3. Press out the receiver pivot pin (fig. 3-11). Separate the upper and lower receiver groups (fig. 3-12), and place the lower receiver group on the table.

CAUTION

The receiver pivot pin does not come out of the receiver.

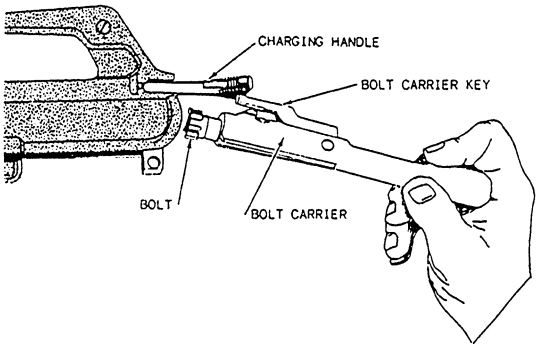


Figure 3-13.—Removing bolt carrier from receiver.

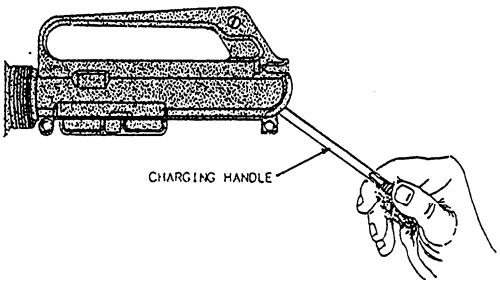


Figure 3-14.—Removing the charging handle.

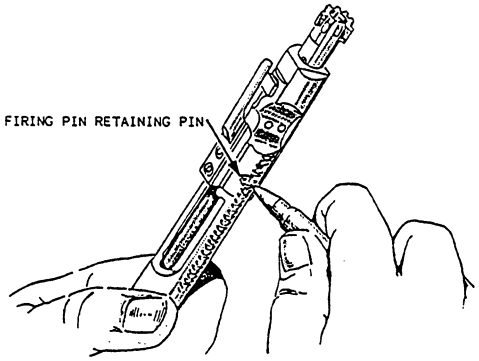


Figure 3-15.—Pressing out the firing pin retaining pin with the tip of a cartridge.

4. Pickup the upper receiver group, keeping the muzzle to the left. Grasp the charging handle; press in on the latch and pull it to the rear (fig. 3-7) to remove the bolt carrier from the receiver. Grasp the bolt carrier and pull it from the receiver (fig. 3-13). When the bolt carrier is removed, the charging handle frills free of its groove in the receiver (fig. 3-14). Place the receiver on the table.

5. Press out the firing pin retaining pin (fig. 3-15) to disassemble the bolt carrier group. Elevate the front of the bolt carrier, and allow the firing pinto drop from its well in the bolt (fig. 3-16). Rotate the bolt until the cam pin is clear of the bolt carrier key. Remove the cam pin by rotating it 90 degrees (one-quarter turn) and

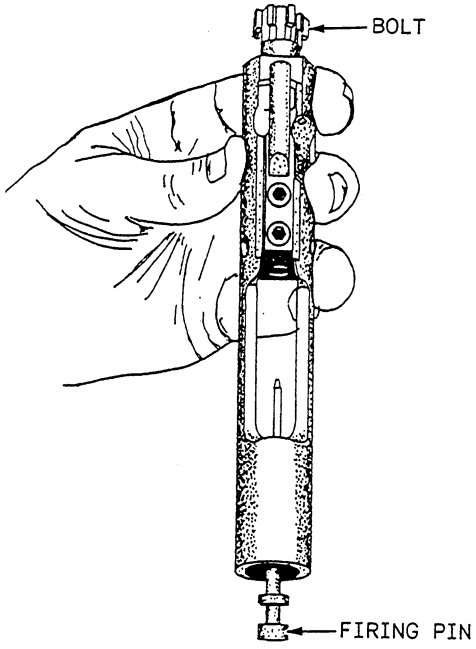


Figure 3-16.—Removing the firing pin.

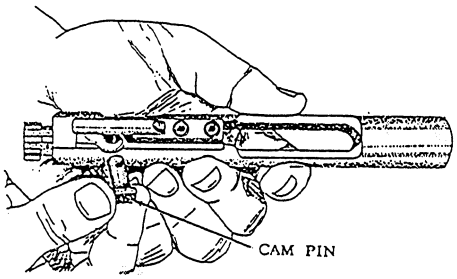


Figure 3-17.—Removing the cam pin.

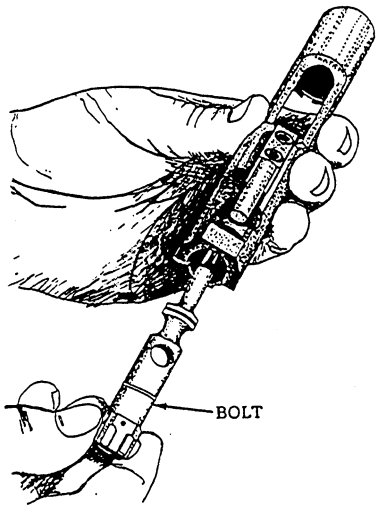
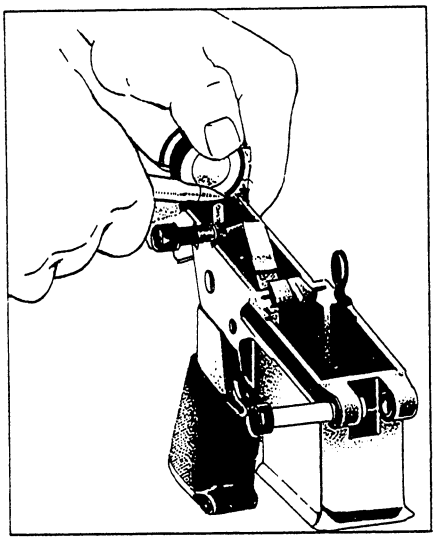


Figure 3-18.—Removing the bolt from the bolt carrier.

lifting it out of the well in the bolt and bolt carrier (fig. 3-17). After the cam pin is removed, the bolt can be easily removed from its recess in the bolt carrier (fig. 3-18).



A. DEPRESSING THE BUFFER RETAINER.

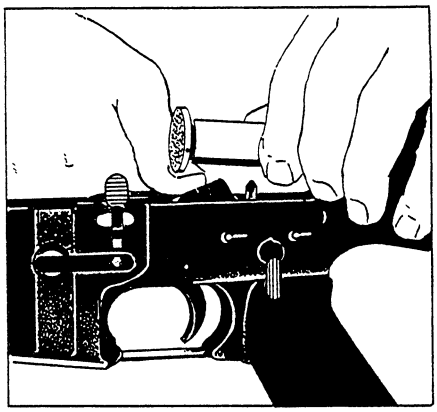


Figure 3-19.—Removing the buffer assembly and action spring.

Remove the extractor by first pushing the extractor pin out with the firing pin. Then, while maintaining pressure on the rear portion of the extractor with your index finger, withdraw the firing pin from the extractor pinhole. Release the pressure from the extractor and remove. The extractor should be disassembled only when necessary for cleaning. Disassembly of the extractor should be supervised. Since the extractor pin is quite small, handle it with care to prevent loss or damage.

NOTE: Do not remove the extractor spring from the extractor. If the spring falls out of its recess, the battalion armorer should replace it.

6. Push in on the buffer assembly, using the index finger of the left hand. With the nose of a cartridge or some similar object, push down on the buffer retainer (fig. 3-19, view A). To remove the buffer assembly, press the hammer downward past the cocked position. After the body of the buffer assembly has cleared the hammer, you can withdraw the action spring from the lower receiver (fig. 3-19, view B).

NOTE: The action spring is under pressure; therefore, take care when you are removing it. Step 6 should be performed only when absolutely necessary for care and cleaning.

Figure 3-20 shows the Ml6A1 service rifle field-stripped after you complete the above steps.

ASSEMBLY OF THE RIFLE

To assemble the rifle, reverse the procedures of disassembly.

1. Insert the end of the assembly spring into the lower receiver extension; depress the cocked hammer to allow passage of the buffer assembly; depress the buffer retainer with the nose of a cartridge or the tip of the firing pin; seat the buffer assembly; and then release the buffer retainer.

2. Assemble the bolt carrier group by grasping the bolt and the extractor with the action spring. Seat the extractor in the extractor recess; apply pressure on the extractor to align the pinhole; and then insert the extractor pin. Pickup the bolt carrier with the carrier key up and to the front; insert the bolt into the front of the bolt carrier, ensuring that the ejector is down and to the left. Replace the cam pin into its well, and rotate the cam pin 90 degrees (one-quarter turn) to align the holes for the firing pin in the bolt and the cam pin. Grasp the lugged rim of the bolt, and turn it until the cam pin is directly under the bolt carrier key. Insert the firing pin through the open end of the bolt carrier and seat it folly. Insert the firing pin retaining pin (if you encounter resistance, rotate the pin while inserting it).

CAUTION

Do NOT attempt to spread the slotted end of the firing pin retaining pin. Check for proper assembly by elevating the front of the bolt. If the firing pin drops out, the firing pin retaining pin is not between the front and rear spool. The bolt carrier group is improperly assembled.

3. Grasp the upper receiver with the carrying handle up. Place the charging handle into the groove in the top of the upper receiver. The lugs on the charging handle must be seated in their grooves in the receiver. Place the bolt carrier group into the open end of the receiver, ensuring that the bolt carrier key is in the slot

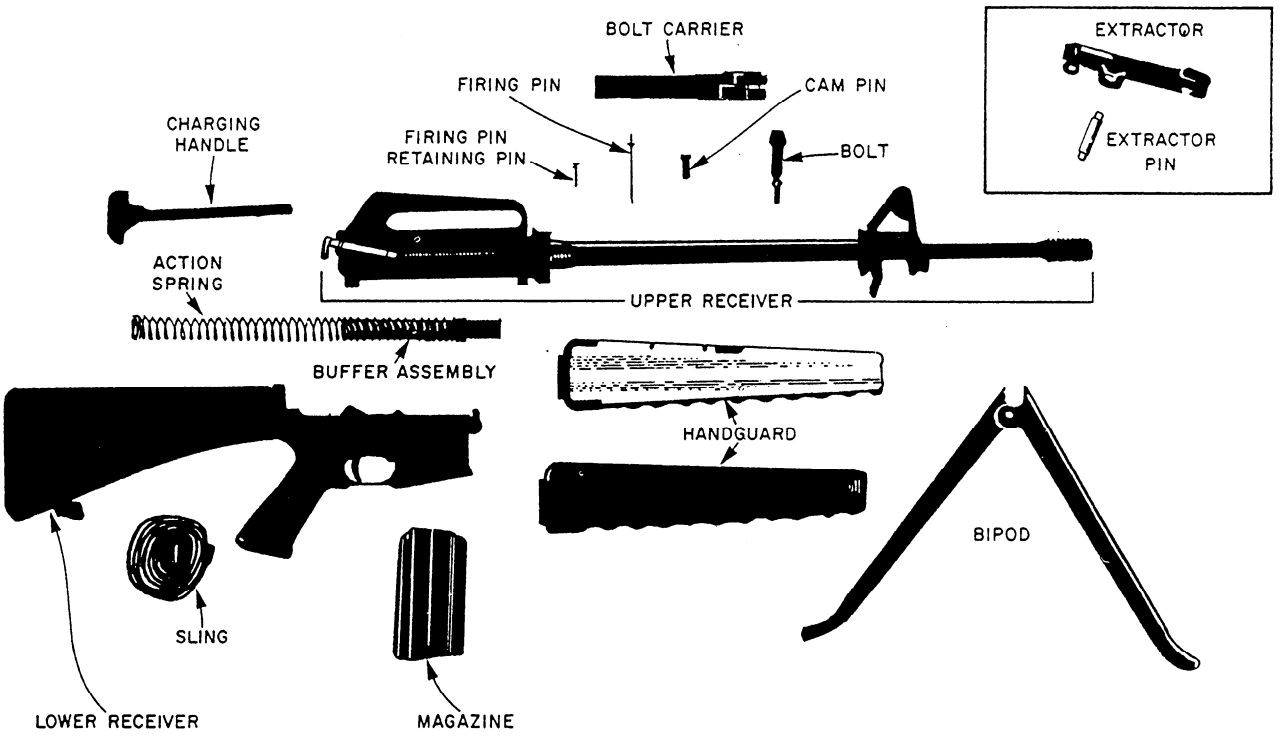


Figure 3-20.—The M16A1 service rifle field-stripped.

on the underside of the charging handle and the bolt is forward in the unlock position. Push forward on the bolt carrier group and charging handle until it is fully seated.

4. Place the upper receiver group and lower receiver group together, and reseat the receiver pivot pin.

5. With the hammer cocked and the selector lever on SAFE, close the weapon and seat the takedown pin.

6. Replace the handguards, and be sure that the slip ring is fully seated on the lower lip of both sections of the handguards. Take care to prevent damage to the upper and lower lips and to ensure proper seating.

7. A complete fictional check of the rifle consists of checking the operation of the weapon while the selector is in the SAFE, SEMI, and AUTO positions. Use the following sequence for a rapid, complete check. You may use any portion of the check alone to determine the operational condition of any specific fire selection.

NOTE: Disengage the takedown pin and open receivers. The hammer must be in the cocked position.

a. SAFE position. Pull the trigger; the hammer should not fall.

b. SEMI position. Pull the trigger; the hammer should fall. Hold the trigger to the rear, recock the hammer, and release the trigger. The hammer should transfer from hammer hooks and disconnect to the hammer and sear engagement.

c. AUTO position. Pull the trigger; the hammer should fall. Hold the trigger to the rear, and recock the hammer. The hammer is now under the automatic sear. Still holding the trigger to the rear, push forward on the automatic sear. The hammer should frill. Still holding the trigger to the rear, recock the hammer, release the trigger, and push forward on the automatic sear. The hammer should transfer to the sear engagement. Move the selector lever to SAFE or SEMI position. Close the receivers and engage the takedown pin.

CAUTION

If the selector lever is not moved to the SAFE or SEMI position before you close the receivers, you can damage the automatic sear.

d. SEMI position. Pull the charging handle to the rear. Make certain the chamber is clear; then release the charging handle. Pull the trigger. The hammer should fall.

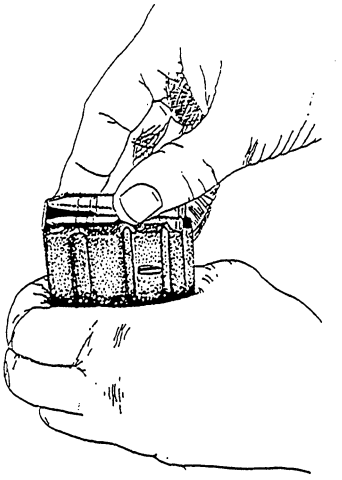


Figure 3-21.—Loading cartridges into the magazine, 20 rounds capacity.

LOADING THE MAGAZINE

The magazine has a capacity of 20 rounds and may be loaded with any amount up to that capacity. The magazine follower has a raised portion generally resembling the outline of a cartridge. Cartridges are loaded into the magazine so the tips of the bullets point in the same direction as the raised portion of the follower (fig. 3-21).

CAUTION

Do not load or attempt to load more than 20 rounds in the magazine. Overloading deforms the lips of the magazine and causes malfunctions.

UNLOADING THE MAGAZINE

To prevent damage to the lips of the magazine, remove the ammunition in the following manner:

1. Hold the magazine in your left hand with the open end away from your body and with the nose of the cartridge down (fig. 3-22, view A).

2. Depress the center of the second round in the magazine using the nose of the cartridge, allowing the first round to drop out of the magazine (fig. 3-22, view B). Repeat this procedure until you remove all the rounds from the magazine except the last one.

3. Use the nose of the cartridge to depress the follower to remove the last round, allowing the last round to drop out of the magazine (fig. 3-22, view C).

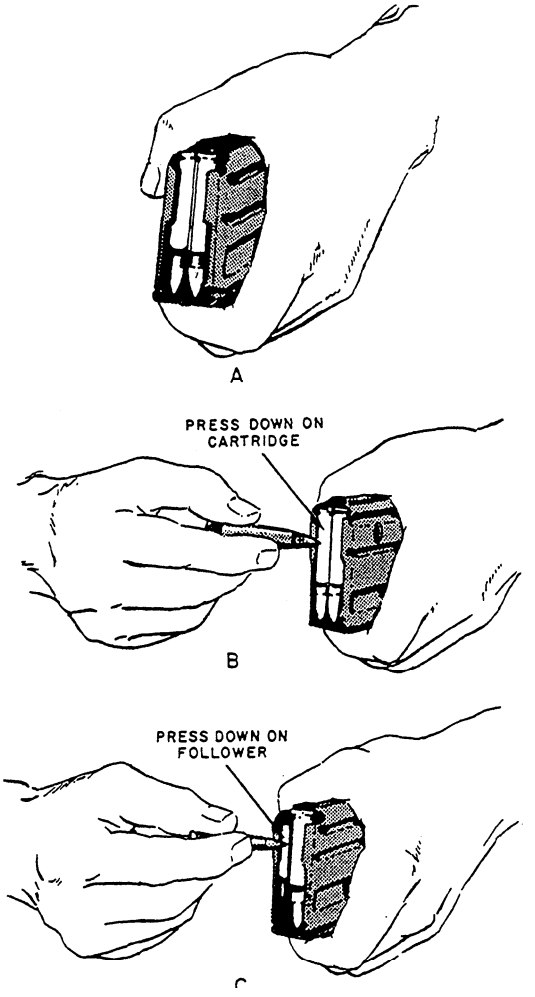


Figure 3-22.—Unloading the magazine with the nose of a cartridge.

LOADING THE RIFLE

With the hammer cocked, place the selector lever on SAFE. (See fig. 3-6.) Notice that you cannot place the selector lever on SAFE unless the rifle is cocked. You may insert the magazine with the bolt and bolt carrier open or closed; however, you should learn to load with the bolt open. This reduces the possibility of first-round stoppage and saves the time needed to pull the charging handle to the rear.

Hold the stock of the rifle under your right arm with your right hand. Grasp the pistol grip; then point the muzzle in a safe direction. With your left hand, insert the loaded magazine into the magazine housing. Push upward until the magazine catch engages and holds the magazine. Rap the base of the magazine sharply with the heel of your hand to ensure positive retention. If the action is open, release the bolt by depressing the upper portion of the bolt catch with the thumb of your left hand, allowing the action to close, chambering the round. If the action is closed when the magazine is inserted, pull

the charging handle fully to the rear with your right hand and release it. (See fig. 3-7.)

NOTE: Do not "ride" the charging handle forward with the right hand. If the charging handle is eased forward from the open position, the bolt may fail to lock If the bolt fails to go frilly forward, use the bolt closure forward assist assembly (fig. 3-1) with the heel of your right hand. The rifle is now loaded and is ready to fire when you place the selector lever in the automatic or semiautomatic position. If it is not ready to fire, make sure the selector lever is on SAFE.

After the last round has been fired, the bolt catch holds the bolt carrier to the rear. To change the magazine for reloading, press the magazine catch button; remove the empty magazine from the weapon.

FIRING THE RIFLE

The rifle fires semiautomatically or automatically when you move the selector lever to the desired position. (See fig. 3-5.) With the selector lever in the semiautomatic position, the rifle fires one round each time you pull the trigger. With the selector lever in the automatic position, the Ml6A1 rifle continues to fire until the magazine is empty or you release the trigger. The M16A2, mentioned earlier, cannot fire fully automatically, but fires in short bursts of three rounds. When the rifle is fired in either SEMI or AUTO, the bolt locks in the open position when the last round from the magazine has been fired.

MALFUNCTION, STOPPAGE, AND IMMEDIATE ACTION

A malfunction is the failure of a weapon to function satisfactorily, usually because of excessive friction caused by dirt, improper lubrication, or carbon buildup. To correct this problem, you must clean the weapon.

A stoppage is any interruption in the cycle of functioning caused by faulty action of the weapon or faulty ammunition To connect this problem, you should replace either the worn or broken part or the ammunition.

Immediate action is the action you take to correct the stoppage without analyzing the cause. Immediate action to clear a stoppage in the rifle is as follows:

1. Strike the forward assist assembly to ensure the extractor has engaged the round. Tap upward on the bottom of the magazine to ensure that it is fully seated. Pull the charging handle fully to the rear. Watch for the ejection of a complete cartridge or cartridge case.

2. If a cartridge or case is ejected, release the charging handle to feed a new round (do not ride the charging handle forward). Then strike the forward assist assembly to assure complete bolt closure. Attempt to fire the weapon. If the weapon fails to fire, inspect it to determine the cause of the malfunction and take the correct action.

3. If the cartridge or case is not ejected, check for around in the chamber. If the chamber is clear, release the charging handle to feed a round, strike the forward assist assembly, and attempt to fire. If the weapon still fails to fire, clear and inspect it to determine the cause of the malfunction and take the correct action.

4. If a cartridge or case is visible in the chamber, you must remove it before attempting to reload or recycle the rifle. Remove the stuck cartridge or case by inserting the cleaning rod into the bore from the muzzle end of the rifle and tapping the cartridge or case.

MISFIRE AND COOK OFF

These malfunctions rarely happen when you fire only authorized and properly maintained ammunition in properly maintained and operated weapons. However, you must understand the nature of each kind of malfunction as well as the proper preventive and corrective procedures in order to avoid personal injury or damage to your rifle. The following procedures for removing chambered cartridges associated with these malfunctions are given below:

1. MISFIRE. A misfire is a complete failure to fire, NOT a delay in firing that may be caused by a faulty firing mechanism or a faulty element in the propelling charge explosive train.

2. COOK OFF. A cook off is a functioning of any or all of the explosive components of a cartridge chambered in a hot weapon because of the heat from the continued firing of the weapon. When this happens, attempt to remove the cartridge before 10 seconds elapse. If a cartridge is chambered in a hot rifle and can neither be fired nor removed, keep your rifle trained in a safe direction. Then allow for a minimum of 15 minutes to elapse before taking any further corrective action.

UNLOADING AND CLEARING THE RIFLE

To unload the rifle and make it safe, place the selector lever on the SAFE position (fig. 3-5); and remove the magazine by pressing the magazine catch

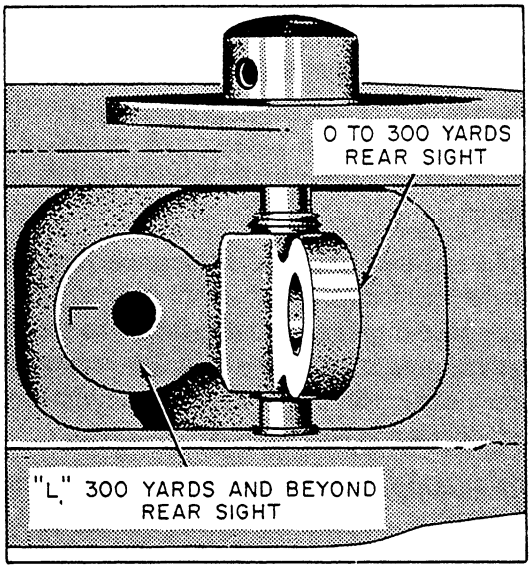


Figure 3-23.—Rear sight aperture.

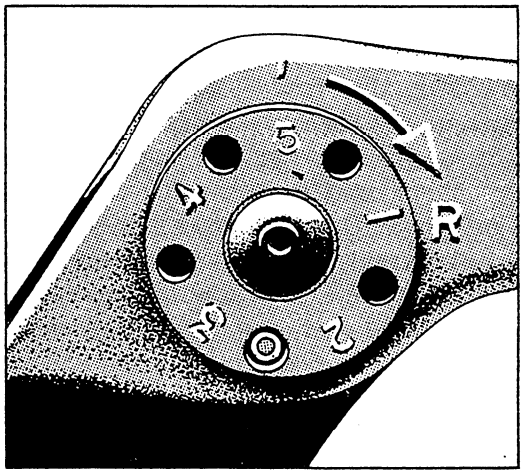


Figure 3-24.—Windage drum.

button (fig. 3-6). Pull the charging handle to the rear (fig. 3-7), ejecting any round from the chamber. Inspect the chamber and receiver to ensure that it is clear. Releasing the charging handle will allow the bolt to close. To keep the bolt open, depress the lower portion of the bolt catch before returning the charging handle forward (fig. 3-8). The rifle is clear only when no case or round is in the chamber, the magazine is out, the bolt carrier is to the rear, and the selector lever is on the SAFE position.

SIGHTS OF THE RIFLE

The sights of the rifle are adjustable for both windage and elevation. Windage adjustments are made on the rear sight; elevation adjustments are made on the front sight.

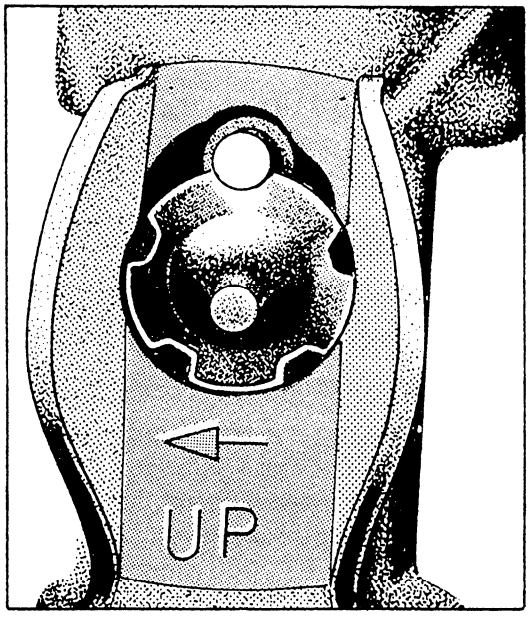


Figure 3-25.—Front sight, M16A1.

The rear sight consists of two apertures, as shown in figure 3-23, and a windage drum with a spring-loaded detent, as shown in figure 3-24. The aperture marked "L" is for use for ranges beyond 300 yards; and the unmarked aperture is for use for ranges from 0 to 300 yards. Adjustments for windage are made by pressing in on the spring-loaded stud with either a pointed instrument or the tip of a cartridge and rotating the windage drum in the desired direction.

The front sight of the Ml6A1 rifle consists of a rotating sight post with a spring-loaded stud (fig. 3-25). Adjustments are made by using a pointed instrument or a tip of a cartridge. To raise or lower the front sight post, depress the spring-loaded stud and rotate the post in the desired direction of change. A spring-loaded detent keeps the post from being moved accidentally. To raise the strike of the bullet, depress the detent and rotate the sight post clockwise.

Each click of elevation or windage adjustment will move the strike of the bullet a specific distance at a specific range. At a range of 100 yards, one click of either elevation or windage on the sights of the rifle will move the strike of the bullet approximately 1 inch, or 2.54 centimeters, up or down.

AMMUNITION FOR THE RIFLE

The 5.56-mm ammunition, as shown in figure 3-26, for the M16 rifle is classified as small arms ammunition and is issued in the form of a complete round. A complete round (cartridge) consists of all the components necessary to fire the weapon once; that is,

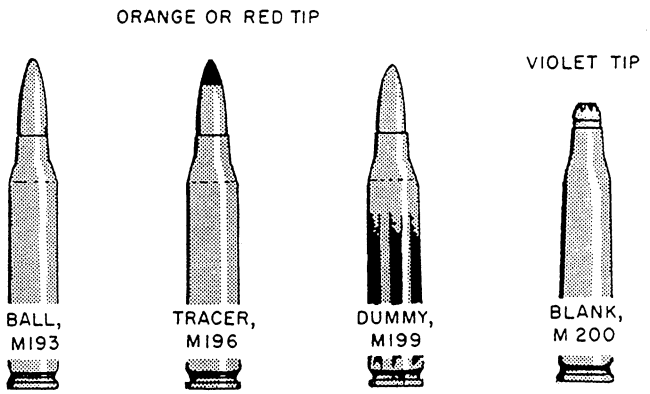


Figure 3-26.—5.56-mm ammunition for the M16A1 and M16A2 rifles.

projectile (bullet), propellant, and primer. Based upon the type of projectile, the ammunition for use in the rifle is classified as follows:

1. The ball cartridge, M193, is for field use and has no distinguishing marks. When shot from the rifle, its muzzle velocity is approximately 3,250 feet per second. It has a maximum range of 3,000 yards, but the maximum effective range is 500 yards.

2. The tracer cartridge, M196, is used to observe fire and for incendiary effect. You can identify it by an orange- or a red-painted tip, depending on the ammunition lot number. The use of only tracer cartridges may cause deposits of the bullet-jacket material (metal fouling) to form in the bore and rifling grooves of the barrel. These tracer deposits are extremely difficult to remove and are a potential safety hazard. Therefore, when tracer ammunition is fired in the M16 rifle, you should intermix it with ball ammunition in a ratio of no less than four ball rounds to each tracer round.

3. The dummy cartridge, M199, cannot be fired. You can identify it by six lengthwise ridges in the case. The dummy cartridge is for use in training only.

4. The blank cartridge, M200, is for use in training and ceremonial salutes. Its case mouth is closed with a rosette crimp that has a violet tip. You can identify it by the knurled band around the lower portion of the case. The grooves help identify the types of cartridges by feel when you cannot see the colored tip in the dark

CARING AND CLEANING OF THE RIFLE AND AMMUNITION

A clean, properly lubricated and maintained rifle loaded with clean ammunition will fire when needed. In order to keep the rifle in good condition, it must have care and cleaning. Under bad weather conditions, some key parts may need care and cleaning several times a day. The cleaning material, as shown in figure 3-27, used for the care of the rifle, is carried in the rifle stock Special attention must be given to the following areas:

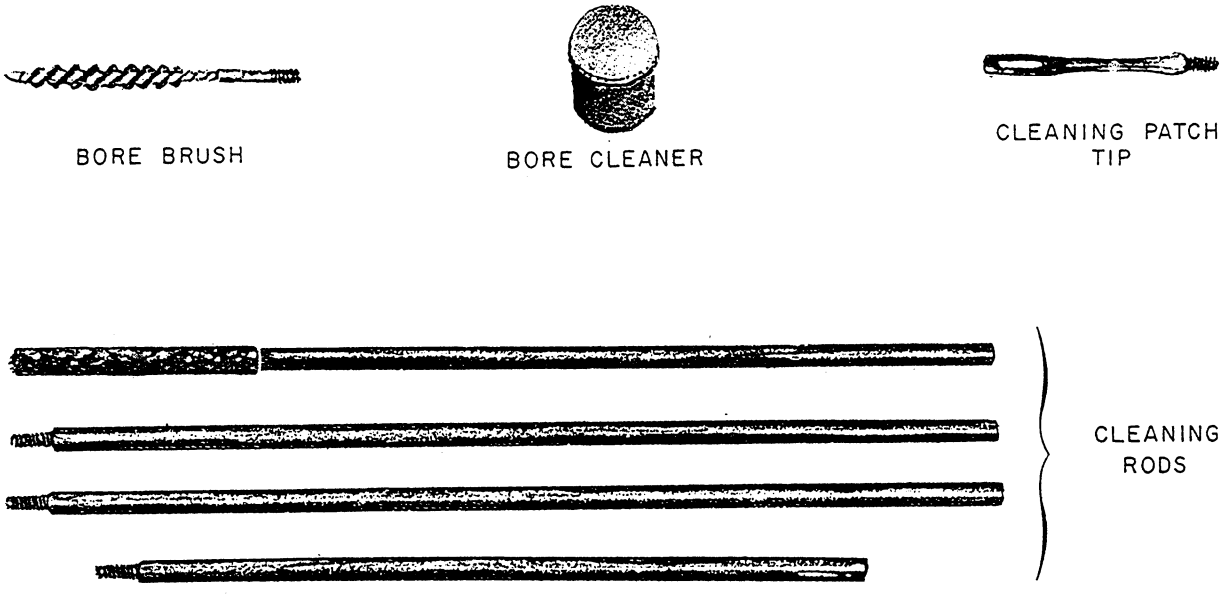


Figure 3-27.—M16A1 and M16A2 rifle cleaning material.

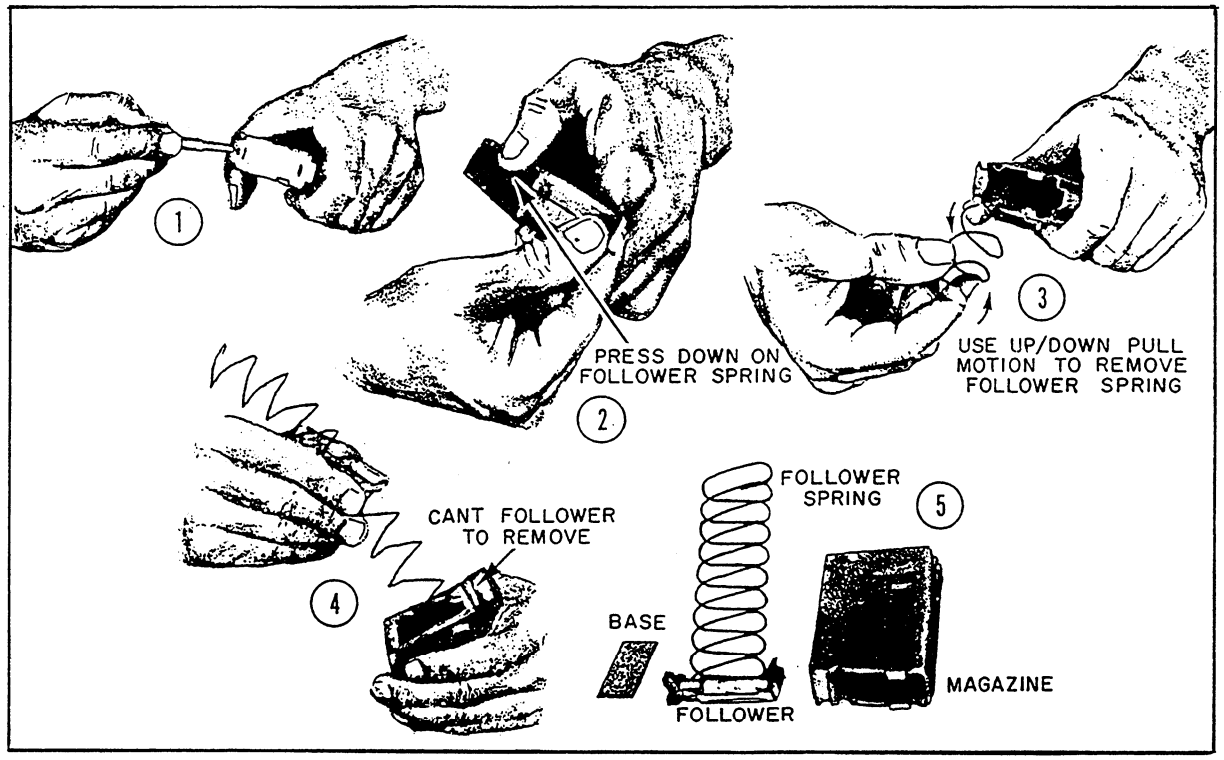


Figure 3-28.—Disassembly of the 20-round magazine.

1. BARREL BORE and CHAMBER. After dipping a bore brush in the bore cleaner, brush from the chamber to the muzzle, using straight-through strokes. Do NOT reverse the brush while it is in the bore or it may jam. A jammed brush is hard to remove, and it can possibly damage the bore when you do this. After dipping the brush in bore cleaner, clean the chamber with the chamber brush. Replace the bore brush with a slotted cleaning patch tip, and push the dry patches through the bore and chamber until they come out clean. After cleaning the bore, lightly lubricate the bore and chamber to prevent corrosion and pitting, using the recommended lubricant on a patch. Lightly lubricate the lugs in the barrel extension.

2. BOLT CARRIER GROUP. Dip the bore brush in the bore cleaner, and clean the inside of the carrier key. Dry with a pipe cleaner. Clean the locking lugs, bolt, extractor ejector, and bolt rings with the bore brush. Remove any accumulation of dirt, carbon, or oil from the firing pin and the external and internal surfaces of the bolt and bolt carrier. Be sure to wipe all parts dry; then lubricate them with the recommended lubricant.

3. UPPER RECEIVER GROUP. With the bore brush or a swab coated with bore cleaner, remove the powder fouling collected on the group. Clean the protruding gas tube inside and outside. After cleaning these components, wipe them dry, and apply alight coat of the recommended lubricant.

4. LOWER RECEIVER GROUP. With the bore brush or a swab coated with bore cleaner, remove dirt, carbon, and sand from the lower receiver group. Dry and apply alight coat of the recommended lubricant.

5 AMMUNITION MAGAZINES. After removing all cartridges from the magazine, depress the spring steel lock band on the bottom of the magazine, using the nose of a cartridge (fig. 3-28, view 1). Slide the base until it is free of the tabs, and remove it from the magazine body (fig. 3-28, view 2). Remove the magazine spring and follower (fig. 3-28, view 3), but do not remove the follower from the spring (fig. 3-28, views 4 and 5). Clean the exterior and interior of the magazine with a dry rag or swab. Apply a light coat of the recommended lubricant to the magazine spring only; otherwise, keep the magazine dry. You assemble the magazine in reverse order and test it to ensure that the follower is free to move without binding. If the magazine and the ammunition in it gets wet, be sure to wipe them dry as soon as possible. When left wet, both the magazine and the ammunition can become corroded and are dangerous to use. Remember not to use oil or grease on any cartridge. If you do this, injurious abrasives can collect in the weapon or produce excessive and hazardous

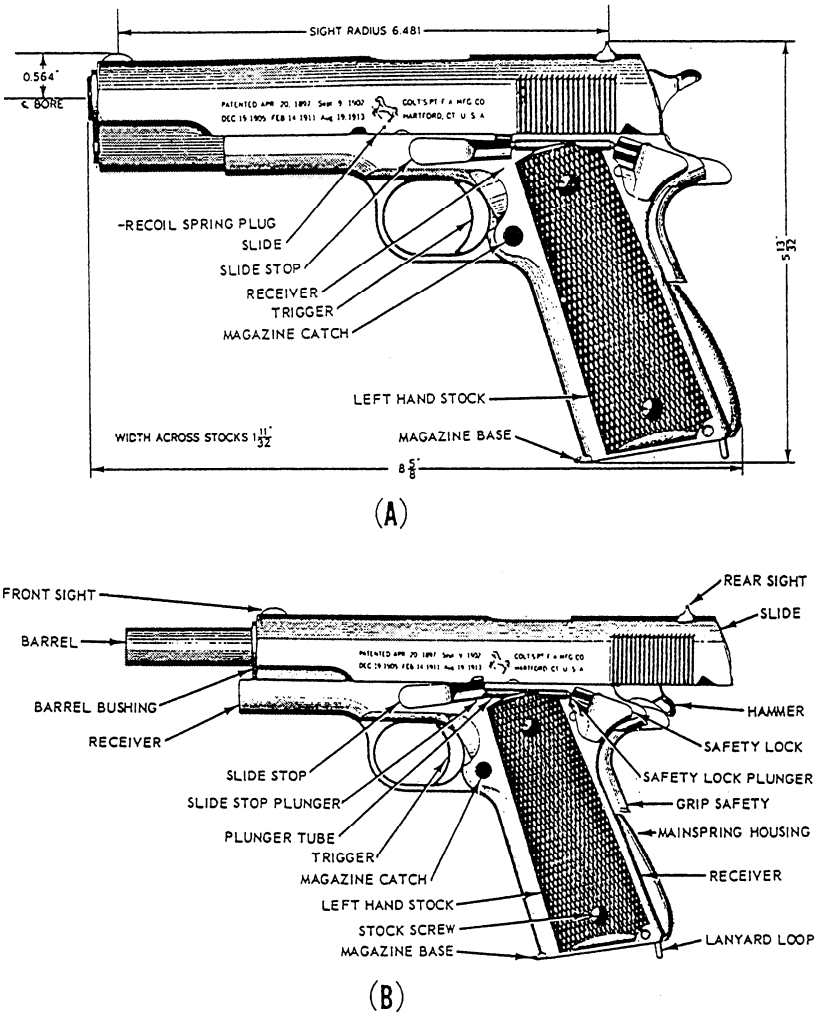


Figure 3-29.—45-caliber semiautomatic service pistol-(A) assembled and (B) sectional view in recoil position.

chamber pressures when the weapon is freed. Whenever practical, ammunition should be stored under cover. This applies particularly to tracer ammunition.

THE .45-CALIBER SERVICE PISTOL

The .45-caliber service pistol shown in figure 3-29 is an individual weapon intended for use in close combat. The .45-caliber pistol is a semiautomatic, recoil-operated, magazine-fed hand weapon. The pistol fires one round each time the trigger is squeezed. The pistol can be carried in either a hip or shoulder holster.

The magazine holds seven cartridges. The forward movement of the slide strips the upper cartridge from the magazine into the chamber. After the last cartridge from the magazine has been fired, the slide remains in the rear.

Only your ability to change magazines, aim, and squeeze the trigger rapidly limits the rate of fire of the .45-caliber service pistol.

The pistol is 8 5/8 inches in length and weighs 3 pounds frilly loaded, with a maximum range of 1,500 yards, and a maximum effective range of 50 yards. It uses different kinds of .45-caliber ammunition. (These will be discussed later under ammunition.)

As a Seabee, you are expected to keep this weapon in good working condition. To ensure that it will function correctly, you must disassemble it to inspect and clean the parts. Procedures for general disassembly (field-stripping), assembly, functioning, loading, firing, unloading, malfunctions, stoppages, immediate action, and the care and cleaning of the service pistol will be covered in the following sections.

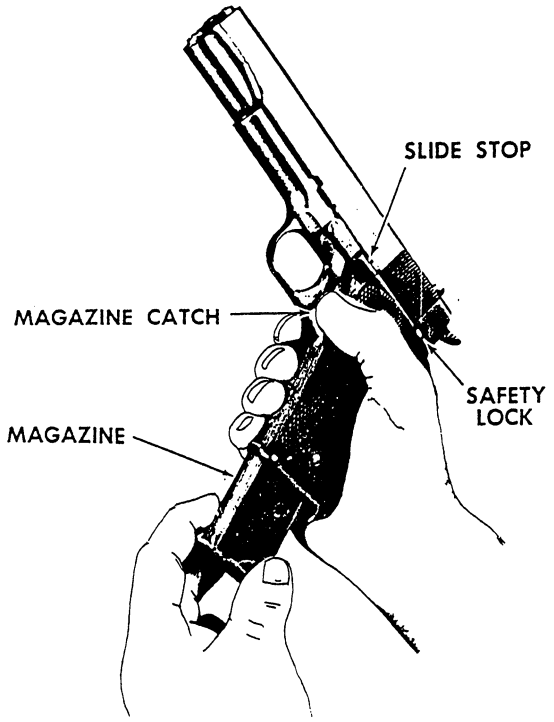


Figure 3-30.—Magazine removal and chamber inspection for a right-handed firer.

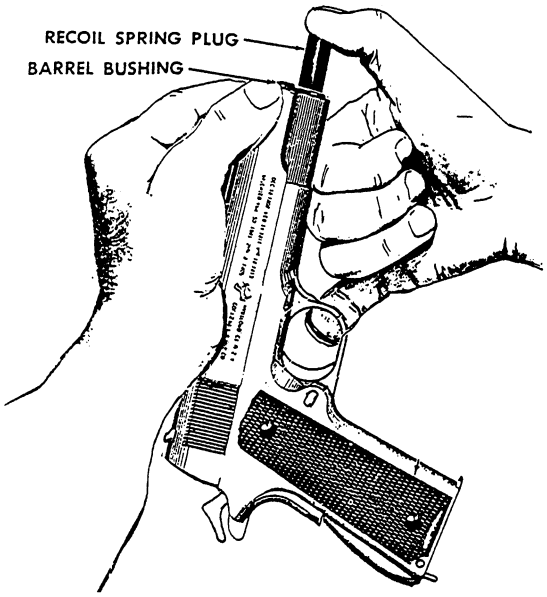


Figure 3-31.—Recoil spring plug removal from the recoil spring.

GENERAL DISASSEMBLY (FIELD-STRIPPING)

General disassembly is the disassembly necessary for normal care and cleaning. To field-strip the service pistol, perform the steps in the following order:

1. Hold the pistol in the raised pistol position, press the magazine catch, and remove the magazine, as shown in figure 3-30, for a right-handed firer. The left-handed firer should reverse hands for this procedure. Pull the slide to the rear and inspect the chamber to see that the weapon is clear. Press down on the slide stop and allow the slide to move forward. Press the thumb safety lock upward to the SAFE position.

2. Press down on the recoil spring plug and turn the barrel bushing one-fourth turn clockwise, as shown in figure 3-31. Allow the recoil spring to expand slowly, under control, to prevent injury or loss of the part and remove the plug. Turn the recoil spring plug counterclockwise and remove it. Leave the recoil spring in place.

3. Press the thumb safety lock downward to the FIRE position. Push the slide to the rear until the disassembly notch, as shown in figure 3-32, is aligned with the rear projection on the slide stop. Press the protruding end of tie slide stop, and then pull out the slide stop.

4. Pull the receiver rearward to separate it from the slide, as shown in figure 3-33.

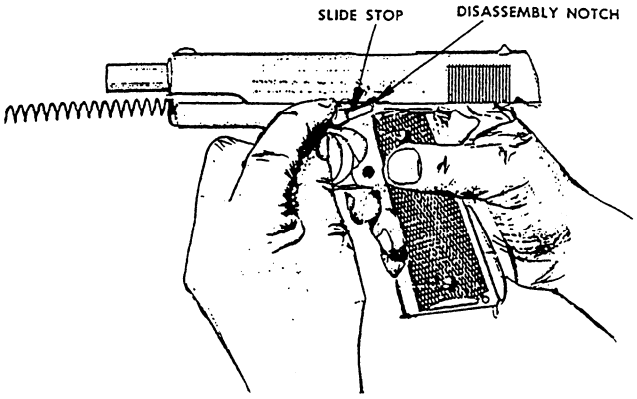


Figure 3-32.—Sllide stop removal.

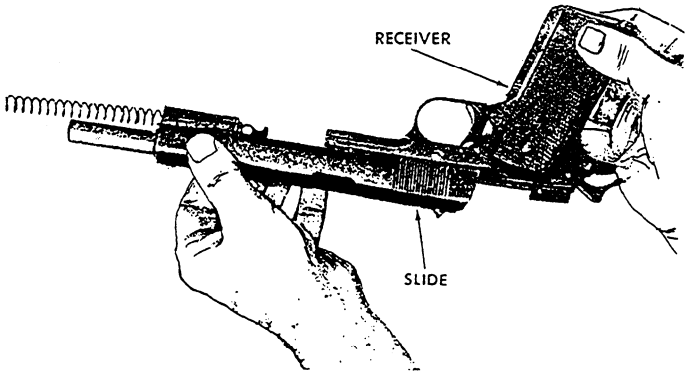


Figure 3-33.—Separating the receiver from the slide by pulling the receiver rearward.

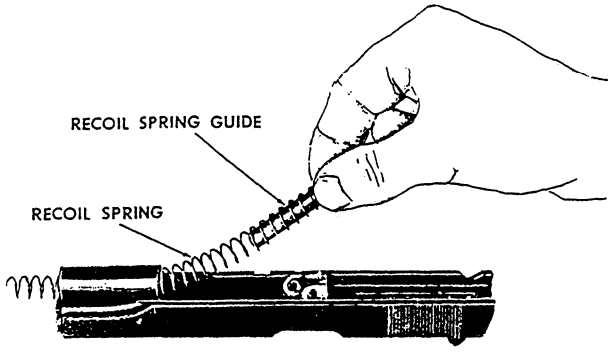


Figure 3-34.—Recoil spring guide and recoil spring removal.

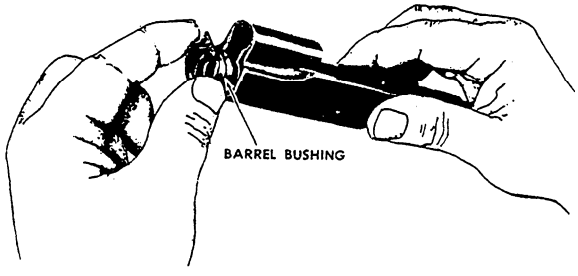


Figure 3-35.—Barrel bushing removal from the slide.

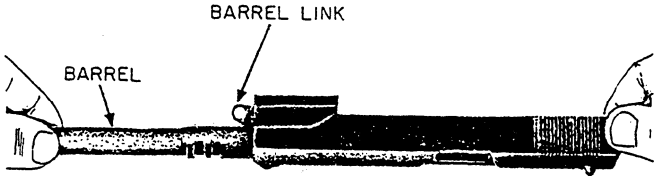


Figure 3-36.—Barrel removal from the slide.

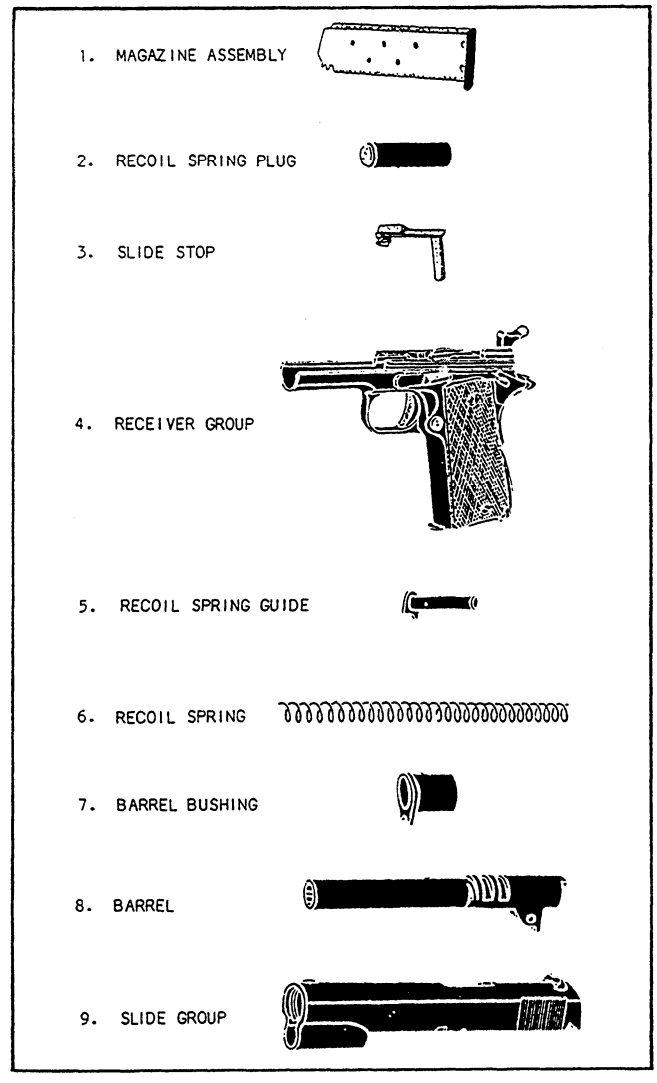


Figure 3-37.—Parts of the pistol in order of field-stripping.

5. Remove the recoil spring guide and recoil spring, as shown in figure 3-34. Separate the two parts with a twisting action.

6. Remove the barrel bushing by turning it counterclockwise, as shown in figure 3-35, and pulling it from the slide.

7. Push the barrel link forward and remove the barrel from the front end of the slide, as shown in figure 3-36. This completes the field-stripping. Observe figure 3-37. It shows the parts of the pistol in the order of the field-stripping just completed.

ASSEMBLY

To assemble the pistol after the field-stripping procedure, replace the parts in the reverse order of the disassembly.

1. BARREL. Push the barrel link forward on the barrel and replace the barrel, chamber end first, in the slide. (See fig. 3-36.)

2. BARREL BUSHING. Place the barrel bushing on the muzzle end of the barrel, push it into the slide, and turn it clockwise. (See fig. 3-35.)

3. RECOIL SPRING AND RECOIL SPRING GUIDE. Insert the recoil spring guide into the tightest end of the recoil spring. Replace these parts in the slide. (See fig. 3-34.) Be sure the concave cut on the recoil spring guide collar is properly seated in the barrel. Push the barrel, recoil spring, and recoil spring guide frilly forward in the slide, ensuring that the barrel link is positioned forward and rests against the hole in the recoil spring guide. (See fig. 3-33.)

4. ASSEMBLING THE RECEIVER GROUP TO THE SLIDE GROUP. Hold the slide with the sights down in the palm of one hand. Invert the receiver (the safety lock must be in the FIRE position) and engage the guide rails of the receiver in the grooves of the slide. (See fig. 3-33.) Push the receiver all the way forward on the slide with a quick motion.

5. SLIDE STOP. Hold the pistol as shown in figure 3-33. Look through the slide stop pinhole in the receiver for alignment of this hole with the hole in the barrel link If the holes are not aligned, move the muzzle end of the barrel forward or rearward to align them. Insert the slide stop pin into the holes. Move the slide forward until the disassembly notch is over the square hole in the left side of the receiver. (See fig. 3-32.) Press the slide stop up and in to seat it fully. In some cases, a punch may be required to depress the slide stop plunger in order to seat the slide stop fully.

6. RECOIL SPRING PLUG. Push the slide frilly forward on the receiver and press the thumb safety lock upward to the SAFE position. Place the recoil spring plug on the recoil spring. Turn the recoil spring plug clockwise to lock the plug to the recoil spring. Holding the pistol, as shown in figure 3-31, insert the recoil spring and push downward on the recoil spring plug, compressing the spring until the plug is inside of the slide. Turn the barrel bushing counterclockwise to lock the recoil spring plug in place. Press the safety lock downward to the FIRE position and squeeze the trigger.

7. MAGAZINE. Insert the magazine into the magazine recess of the pistol until it is fully seated and held by the magazine catch. (See fig. 3-30.) This completes the pistol assembly.

FUNCTIONING

By disassembling and assembling the pistol, you become familiar with the parts. Understanding how the pistol functions will help you keep the weapon in operating condition and reduce stoppages that may occur during firing.

Each time a cartridge is fired, the parts inside the pistol (fig. 3-29) function in a given order. This is known as the cycle of operation (functioning).

The cycle of operation of the pistol is divided into eight basic steps; however, more than one step may be occurring at the same time. The following steps occur in the order listed below:

1. FEEDING—placing a cartridge in the receiver, approximately in back of the barrel ready for cambering

2. CHAMBERING—moving the cartridge from the magazine into the chamber

3. LOCKING—sealing the cartridge in the chamber and blocking the breech end of the barrel

4. FIRING—igniting the primer and firing the cartridge

5. UNLOCKING—unsealing the breech end of the barrel

6. EXTRACTING—removing the cartridge case from the chamber

7. EJECTING—removing the cartridge case from the weapon

8. COCKING—returning the firing mechanism to the cocked position ready to fire another cartridge

SAFETY DEVICES

The pistol has three safety devices: the safety lock the grip safety, and the half-cock notch on the hammer. The safeties must be tested often, and always before the pistol is fired. The disconnector is not considered a positive safety like the three safeties listed above. The disconnector is not a positive safety because it is designed for use to fire the pistol on semiautomatic fire and cannot be controlled by the firer.

OPERATIONAL SAFETY CHECKS

WARNING

Before making the following test, inspect the pistol to ensure that the magazine is removed and the chamber is empty.

SAFETY LOCK. Cock the hammer and press the safety lock up into the SAFE position. Grasp the stock so that the grip safety is depressed and squeeze the trigger three or four times. If the hammer falls, the safety lock is not safe; and it must be replaced.

GRIP SAFETY. Cock the hammer, being careful not to depress the grip safety, and squeeze the trigger three or four times. If the hammer falls, the grip safety or sear spring must be replaced.

HALF-COCK NOTCH. Pull the hammer rearward until the sear engages the half-cock notch and squeeze

the trigger. If the hammer falls, the hammer or sear must be replaced.

LOADING

Draw the pistol from the holster and hold it at the raised pistol position. Insert a magazine loaded with from one to seven rounds of ammunition. Grasp the slide with the left hand, thumb on the right side of the slide. Pull the slide fully to the rear, release, and press the safety lock up to the SAFE position with the left forefinger. Left-handed personnel should reverse the hand positions for this procedure.

FIRING

To fire the pistol right handed, press the safety lock down to the FIRE position with the left thumb to prevent disturbing the firing grip of the right hand. Left-handed Seabees should reverse the above thumb and hand directions to complete this procedure. Obtain the correct sight alignment and sight picture and squeeze the trigger. To fire successive shots, you must release the trigger and squeeze again. When the last cartridge from the magazine has been fired, the slide returns to the rear.

UNLOADING

To unload the pistol, hold it at the raised pistol position. Press the magazine catch and remove the magazine. If the slide is in the forward position, pull the slide to the rear, and push the slide stop up. Inspect the chamber to ensure that the pistol is clear. Press the slide stop down, allowing the slide to go forward. Keep the pistol at the raised pistol position, squeeze the trigger, and then holster the weapon.

MALFUNCTIONS

A malfunction is a future of the weapon to function satisfactorily. Malfunctions are classified as defects in the weapon that normally do not cause a break in the cycle of operation. You may discover a malfunction, for example, when the grip safety does not block the trigger or when the slide does not remain to the rear after the last round is fired.

STOPPAGES

A stoppage is any unintentional interruption in the cycle of operation. If the. pistol stops firing through no fault of yours or the weapon does not fire when you attempt to fire it, then a stoppage has occurred.

Stoppages are classified as a malfunction of one of the eight steps in the cycle of operation given in the previous section. Stoppages are usually the result of worn parts or improper care of the weapon.

IMMEDIATE ACTION

Immediate action is the prompt action you take to reduce a stoppage. The procedure for immediate action should bean instinct when you are armed with the pistol. If a stoppage occurs, apply immediate action automatically in an effort to reduce the stoppage without attempting to discover the cause at that time.

If the slide is fully forward, the hammer falls but the pistol fails to fire, apply immediate action as follows:

1. Manually cock the hammer without opening the chamber and make one additional attempt to fire. If the pistol still fails to fire, wait 10 seconds; then come to the raised pistol position. Grasp the slide with the thumb and first finger of the left hand, keeping the thumb on the right side of the slide. Left-handed shooters should reverse hand and thumb directions for this procedure. Rapidly pull the slide rearward to its full extent. Rotate the pistol to the right allowing the unfired round to drop out, release the slide, and allow it to return to the forward position, cambering anew cartridge.

CAUTION

Keep the pistol pointed down range during this operation.

2. Aim and attempt to fire.

If the slide is not fully forward, apply immediate action as follows: remove the trigger finger from the trigger guard; and with the nonfiring hand, attempt to push the slide fully forward.

If the slide will not move forward, proceed as follows:

1. Bring the weapon to the raised pistol position.
2. Remove the magazine.
3. Grasp the slide with the nonfiring hand, pull the slide to the rear, and lock it with the slide stop.
4. Inspect the chamber. Remove any obstructions.
5. Insert another loaded magazine into the pistol.
6. Release the slide.

7. Aim and attempt to fire.

CARING AND CLEANING THE PISTOL

Care and cleaning the pistol includes daily preventive maintenance, which is the ordinary care of the pistol required to preserve its condition and appearance when no firing is done. Cleaning before firing ensures that the pistol is safe to fire and is properly lubricated for efficient operation. Cleaning after firing ensures that all corrosion-inducing agents deposited in the bore and chamber of the pistol are completely removed.

Daily Preventive Maintenance

Damp air and sweaty hands are great promoters of rust. You should clean your pistol and protect it with the recommended oil after every firing or handling. You should inspect the pistol each day and clean it if necessary.

To clean the pistol, rub it with a rag lightly saturated with oil; then rub it with a dry cloth. Clean the bore with a swab saturated with oil, and then, with a dry swab. Dust out all crevices with a small, clean brush.

To protect the pistol after cleaning it, cover all the surfaces, including the bore and chamber, with a light coat of lubricating, preservative oil.

After cleaning and oiling the pistol, place it back in your holster or the pistol rack Do not place a cover, such as canvas, over the pistol because it collects moisture that rusts the metal.

Care and Cleaning before Firing

Before the pistol is fired, you should clean and dry the bore and chamber and exterior parts of the receiver of the pistol. You should lubricate the guide rails on the receiver and the grooves on the slide with oil. Place a light coat of oil on all other interior metal parts EXCEPT those that come in contact with the ammunition. Excess oil should be removed from the grips and the grip area of the receiver to aid you in griping the weapon.

Care and Cleaning after Firing

You must clean the pistol as soon as possible on the day of firing and daily for the next 3 days, or longer if necessary. Do this in the following manner:

1. Disassemble the pistol.

2. Clean all parts with a rag lightly saturated with oil. Dry all parts and apply alight coat of oil.

3. Clean the bore and chamber as follows:

a. Wet a swab with rifle bore cleaner and run it back and forth through the bore several times.

b. Attach the pistol bore brush to the cleaning rod and run it through the bore and chamber several times.

c. Run dry swabs through the bore and chamber until they are clean.

d. Inspect the bore for cleanliness. If it is not free of all residue, repeat the cleaning process.

e. When the bore and chamber are clean, coat them with rifle bore cleaner and leave it on overnight.

f. Assemble the pistol.

g. Apply a light coat of oil to the exterior surfaces of the pistol.

h. After the third daily cleaning, if the bore and chamber are clean, remove the rifle bore cleaner. Replace the bore cleaner with alight coat of lubricating, preservative oil.

AMMUNITION

As a Seabee armed with the .45-caliber pistol, you must be familiar with the types of ammunition for your pistol and be able to identity each type of ammunition.

A pistol cartridge is a complete assembly consisting of all the components necessary to fire the weapon once; that is, the cartridge case, bullet, propellant powder, and primer.

The types, uses, and means of identification of the ammunition used in the .45-caliber pistol are the following:

1. Ball cartridge, M1911, is for use against personnel and light material targets. The ball round consists of a metal jacket surrounding a lead alloy core. The bullet tip is unpainted.

2. Blank cartridge, M9, is used to simulate fire and for salutes. This cartridge can be fired single shot only in the pistol. You can identify it by the absence of a bullet and by its tapered mouth.

3. Dummy cartridge, M1921, is used for training personnel in the operation of loading and unloading the pistol and for testing weapons. It is used also in marksmanship training by mixing it with live

ammunition during instruction practice firing. You can identify this cartridge by the empty primer pocket and the two holes in the cartridge case.

4. Tracer cartridge, M26, is used for observation of fire. Secondary uses are for incendiary effect and for signaling. The cartridge consists of three parts: (1) a copper-plated, or guiding metal-clad, steel jacket; (2) a slug of lead, hardened with antimony (a chemical hardening element); and (3) a tracer mixture in the rear portion of the jacket. For identification, the bullet is painted red for a distance of approximately three-sixteenths of an inch from the tip.

Small arms ammunition is generally safe to handle. However, you must protect the ammunition you are using from mud, sand, dirt, and water. Keep it clean, dry, and ready for use.

Do NOT oil or polish pistol cartridges.

Do NOT expose the ammunition to direct sunlight for any length of time. If the powder is heated, excessive pressure develops when the weapon is fired. This condition affects the accuracy and the operation of the weapon.

Do NOT attempt to fire cartridges that have dents, scratches, loose bullets, or corroded cases. If any cartridges are defective, turn them in to your supply point. Do not throwaway or attempt to destroy defective ammunition.

Do NOT strike the primer of a cartridge; it may ignite and cause injury.

MARKSMANSHIP

The purpose of marksmanship training is to provide proper information and instruction so you can become a safe and effective shooter.

Good shooting, whether on the firing range or in combat, depends upon the application of basic marksmanship principles. These principles are interrelated and must be practiced each time you fire a shot so you achieve effective results.

There are two parts to this section. The first part describes the techniques of firing a rifle and a pistol. The second part deals with the principles and practices of directing and controlling the combined fire power of rifles and machine guns.

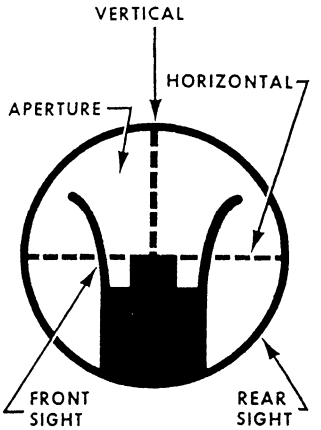


Figure 3-38.—Proper sight alignment.

FIRING TECHNIQUES–RIFLE

The most important factors involved in correct sighting and aiming are proper sight alignment and a correct aiming point. Together they make up the sight picture.

Sight Alignment

Sight alignment is the art of looking through the rear sight aperture, focusing the eye on the front sight post (or blade), and centering the front sight post exactly in the rear sight aperture both vertically and horizontally. The body of the front sight post, or blade, is centered vertically. The tip of the front sight post, or blade, is centered horizontally within the rear sight aperture (fig. 3-38).

REAR SIGHT.– In each firing position (prone, standing, kneeling, and sitting), the aiming eye is at a slightly different distance from the rear sight. This distance, refereed to as eye relief, causes the opening (peep) of the rear sight to appear larger or smaller, depending on the firing position. Regardless of the apparent size of the rear sight opening, the front sight must be aligned in the center of the opening. It is important to keep your eye the same distance from the peep sight in any particular firing position. To ensure this distance is always the same, you must hold the rifle in the same exact location for each shot. This location is commonly called the SPOT WELD, or anchor. There are several tricks shooters use to help them maintain this distance. One is to place a small piece of tape on the stock of the rifle where it touches the cheek. In this manner, the shooters can feel whether their cheek has the proper eye relief.

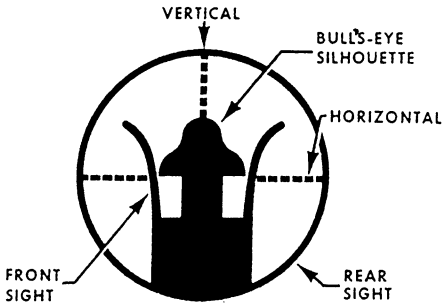


Figure 3-39.—6 o'clock sight picture held on "A" target at a range of 200 yards.

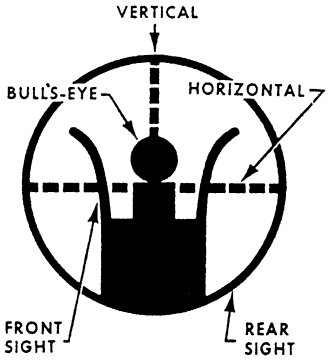


Figure 3-40.—6 o'clock sight picture held on "D" target at a range of 200 yards.

FRONT SIGHT.– The friont sight always appears to be the same size. However, depending on the distance your eye is from the rear sight, more or less of the front sight may be visible in the sight picture. The front sight, not the target, is the point of focus for the eye; and as such, it will be sharp and distinct in outline. For this reason, keep the front sight square, leveled, and blackened.

AIMING POINT.– The aiming point is that point on the target upon which the sights of the weapon are brought to bear. The correct aiming point is at 6 o'clock; that is, the bottom of the bull's-eye of a type "A" target (fig. 3-39) or the silhouette of a type "D" target (fig. 3-40). Any location on the target face is always given relative to a similar position on a clockface regardless of the target shape. Therefore, a vertical line in the exact center of the target would be described as running from 12 o'clock (top) to 6 o'clock (bottom).

SIGHT PICTURE.– You obtain the correct sight picture by aligning the rear sight, the front sight, and the bull' s-eye (figs. 3-39 and 3-40). Each of these three elements affects the sight picture. As you can see from figure 3-41, any error in sight alignment will increase as the range increases. An error in the aiming point remains constant as the range increases. Therefore, of the two, sight alignment is the most important.

At close ranges, the bull's-eye or silhouette will appear larger in relation to the front sight, than it will at longer ranges. This means that the sight picture will vary

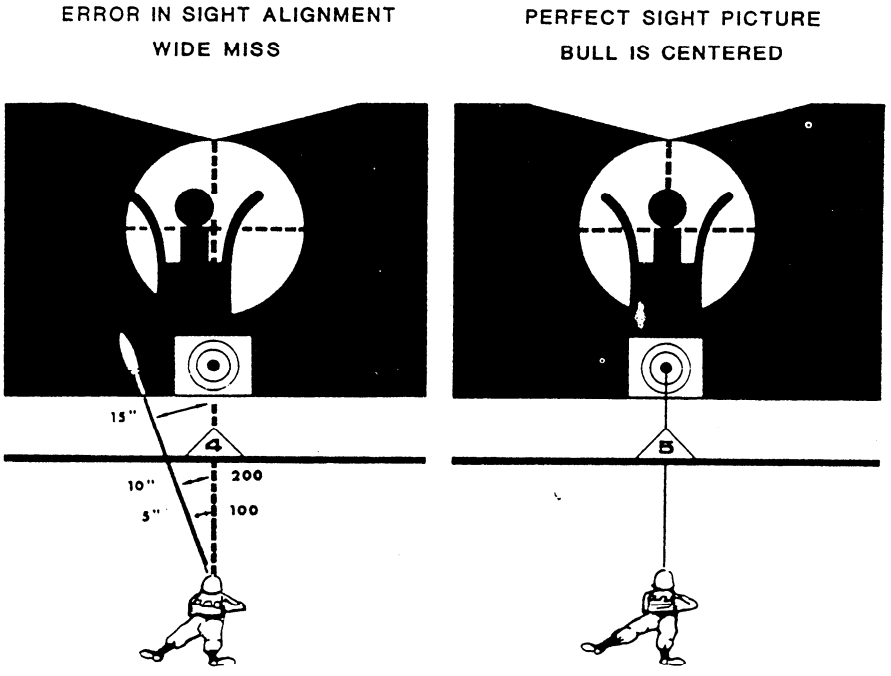


Figure 3-41.—Error in sight alignment increases as range increases.

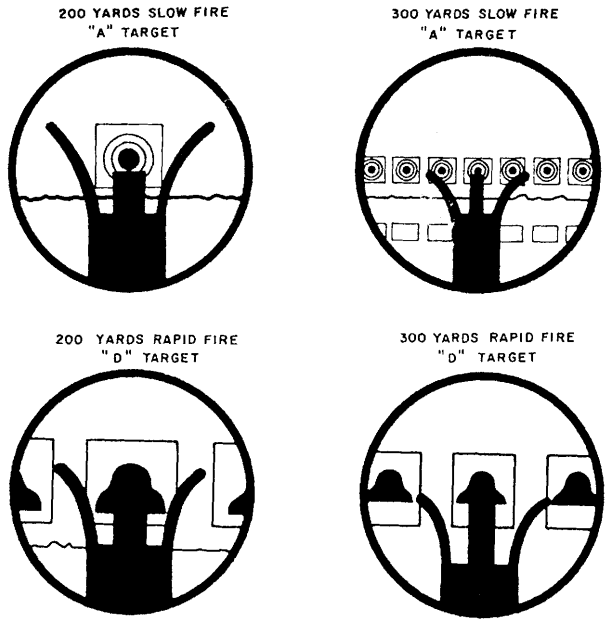


Figure 3-42.—Variation in sight picture for each range of fire.

not only from one firing position to another but also from one firing line to another (fig. 3-42).

TRAINING.– You will receive training in aiming along with the position and trigger squeeze before actually firing on the rifle range. You do this by aiming at a series of small bull's-eyes at least 20 feet away on a "dry-firing" range; this training is known as "snapping in."

BLACKENING SIGHTS.– You should blacken the sights during sighting and aiming exercises to help eliminate light reflection or glare. Blacken all sights, both front and rear, on the base of the receiver and the top of the barrel. The usual way of blackening a sight is by means of a smudge pot, carbide lamp, oily patch, candle, cigarette lighter, or ordinary match. Be sure to remove all oil from the sight before blackening it.

Shooting Positions

A correct shooting position is essential to obtain the best results in rifle shooting. The better the position, the easier it is to hold the rifle and squeeze the trigger while the sights are properly aligned on the target. However, no degree of excellence in the position will compensate for lack of practice. You may have difficulty in assuming a connect position until sufficient practice has limbered up your muscles. Once your muscles are limber, you will find the positions both comfortable and steady.

The Seabee qualification course requires you to learn and use four standard positions: prone, standing, kneeling, and sitting. These positions have been selected as a result of experience and have been found to produce excellent results with men and women of all physical types.

Once you master the correct positions, you must combine sighting and aiming with your practice. Learn to get into the correct position and align the sights without moving the rifle. If the target is not properly aligned with the sights, you must move your body instead of the rifle until you obtain the proper sight picture.

PRONE POSITION.— The prone position (fig. 3-43) is a steady position that is easy to assume and excellent for initial training. In the field, the position presents a low silhouette and is readily adaptable to the use of cover and support. However, observation from this position is difficult.

Figure 3-43.—Prone position.

Figure 3-44.—Standing position.

Figure 3-45.—Kneeling position.

STANDING (OFF-HAND) POSITION.– The standing position (fig. 3-44) is used to engage surprise targets that appear at close ranges. Normally, you use this position when engaging targets less than 100 yards in range and when you are constantly firing and moving.

Figure 3-46.—Sitting position.

KNEELING POSITION.– The kneeling position (fig. 3-45) is a natural position that can be assumed quickly. It is suitable for use on level ground or on ground that slopes upward

SITTING POSITION.– There are three variations of the sitting position: open leg, cross leg, and cross ankle. The position used depends entirely on the shooter. For steadiness, the open-leg position (fig. 3-46) is second only to the prone position. This position is especially suited for use on ground that slopes downward. The other two alternate sitting positions are the cross-legged position (fig. 3-47) and the cross-ankled position (fig. 3-48).

Trigger Control

The most important single factor in marksmanship is trigger control. Everything about your position and aim may be perfect; but if you do not squeeze the trigger properly, your shot will not go where you aimed it.

The prime consideration in trigger control is that the trigger must be squeezed smoothly, gradually, and evenly straight to the rear. Any sideward pressure, however slight, applied to the trigger during its rearward movement will likely result in a wide shot. Similarly, upward or downward pressure on the trigger will result in high or low shots.

The trigger hand must grasp the stock or pistol grip firmly, but without strain, so the trigger finger will have proper support in overcoming the trigger weight. An